## Amendments to the Claims

1. (currently amended) A method for partitioning an image including a plurality of points into segments, comprising:

selecting a set of base points in the image;

initializing and emitting a wavefront from each base point;

propagating each wavefront according to a speed function until a termination condition is satisfied to determine a corresponding final wavefront; ~~and~~

segmenting the image according to each final wavefront; and

rendering the segmented image.

2. (original) The method of claim 1, further comprising:

constructing a gradient image from the input image;

constructing a variance image from the input image; and

selecting each base point iteratively in order of least gradient and variance values in the respective gradient and variance images.

3. (original) The method of claim 2, in which a likelihood of selecting the base point is inversely proportional to the gradient and variance values.

4. (original) The method of claim 2, in which the gradient image and the variance image are constructed at hierarchical resolution levels.

5. (original) The method of claim 1, in which the initial wavefront is substantially circular.

6. (original) The method of claim 1, in which the speed function varies according to colors in the image.

7. (original) The method of claim 6, in which a speed of propagation increases for adjacent points having a similar color and decreases for the adjacent points having a dissimilar color.

8. (original) The method of claim 6, in which a speed of propagation increases for adjacent points having a low average gradient magnitude and decreases for the adjacent points having a high average gradient magnitude.

9. (original) The method of claim 6, in which a speed of propagation increases for adjacent points having a low gradient magnitude on the normal direction to the wavefront and decreases for the adjacent points having a high gradient magnitude on the direction normal to the wavefront.

10. (original) The method of claim 1, in which the termination condition is a color similarity of the points.

11. (original) The method of claim 1, in which the termination condition is an edge in the image.

12. (original) The method of claim 1, in which the termination condition is an arrival time of each wavefront.

13. (original) The method of claim 1, in which the speed function is constant.

14. (original) The method of claim 1, in which the speed function is varying.

15. (original) The method of claim 1, in which the propagating is performed iteratively using fast marching.

16. (original) The method of claim 15, further comprising:

choosing $\mathbf{x}^*$ as a point in a narrow band set of points with a smallest arrival time $\psi(\mathbf{x}^*)$ of the wavefront;

moving point $\mathbf{x}^*$ from the narrow band set of points to a current segment;

moving all neighboring points $\mathbf{x}^*_j$ of the point $\mathbf{x}^*$ into the narrow band set of points if the neighboring points are not in the narrow band set of points;

updating the arrival time $\psi(\mathbf{x}^*_j)$ for all the neighboring points of $\mathbf{x}^*$,

updating a color mean for the current segment;

updating a color mean for the narrow band set of points;

increasing a total number of points in the current segment; and

updating a total number of points in the narrow band set of points.

17. (original) The method of claim 16, in which the color mean of the current segment is $S_K$, and updated the color mean by $S^t_K = 1/N^t_K\,[N^{t-1}_K\,S_K + I(\mathbf{x}^*)]$, where $t$ is time, and $N_K$ is the total number of points in the current segment, and $I$ is the image.

18. (original) The method of claim 16, in which the narrow band set of points is the wavefront.

19. (original) The method of claim 16, in which the color mean of the narrow band set of points is $B^t_K$, and the color mean is updated by $B^t_K = 1/M_{tK} [M^{t-1}_K B_K - I(\mathbf{x}^*_j) + \sum_j^C I(\mathbf{x}_j)]$, where $M_K$ is the number of points in the current narrow band set.

20. (original) The method of claim 16, in which the color mean $S_K$ of the current segment and the color mean of the narrow band set of points are used to determine color similarity.

21. (original) The method of claim 16, in which a set of representative colors for the current segment and a set of representative colors for narrow band set of points are used to determine color similarity.